

# STAFFORD PARK PLASTICS RECYCLING FACILITY ENVIRONMENTAL PERMIT VARIATION APPLICATION

**BAT / Operating Techniques**  
Prepared for: AO Recycling Limited

SLR Ref: 416.09242.00009  
Version No: 2  
September 2020



## BASIS OF REPORT

This document has been prepared by SLR Consulting Limited with reasonable skill, care and diligence, and taking account of the manpower, timescales and resources devoted to it by agreement with AO Recycling Limited (the Client) as part or all of the services it has been appointed by the Client to carry out. It is subject to the terms and conditions of that appointment.

SLR shall not be liable for the use of or reliance on any information, advice, recommendations and opinions in this document for any purpose by any person other than the Client. Reliance may be granted to a third party only in the event that SLR and the third party have executed a reliance agreement or collateral warranty.

Information reported herein may be based on the interpretation of public domain data collected by SLR, and/or information supplied by the Client and/or its other advisors and associates. These data have been accepted in good faith as being accurate and valid.

The copyright and intellectual property in all drawings, reports, specifications, bills of quantities, calculations and other information set out in this report remain vested in SLR unless the terms of appointment state otherwise.

This document may contain information of a specialised and/or highly technical nature and the Client is advised to seek clarification on any elements which may be unclear to it.

Information, advice, recommendations and opinions in this document should only be relied upon in the context of the whole document and any documents referenced explicitly herein and should then only be used within the context of the appointment.

## CONTENTS

<b>1.0</b>	<b>INTRODUCTION .....</b>	<b>1</b>
1.1	Report Structure .....	2
1.2	Site Setting .....	2
<b>2.0</b>	<b>MANAGEMENT.....</b>	<b>2</b>
2.1	Management System .....	2
2.2	Management Structure and Responsibilities .....	3
2.3	Technical Competence and Training.....	3
2.4	Site Security .....	4
2.5	Permit Surrender .....	4
2.6	Display of Environmental Permit .....	4
2.7	Managing Documentation and Records.....	4
2.8	Reporting Non-Compliance and Taking Corrective Action .....	5
2.9	Auditing and Legal Compliance .....	5
2.10	Monitoring, Measuring and Reviewing Environmental Performance.....	5
2.11	Operational Control, Preventative Maintenance and Calibration .....	5
2.12	Design and Construction Quality Assurance.....	5
<b>3.0</b>	<b>ACCIDENT MANAGEMENT PLAN .....</b>	<b>6</b>
3.1	Risk Estimation.....	6
3.2	Hazard Identification.....	6
3.2.1	Unauthorised Waste.....	6
3.2.2	Fire.....	6
3.2.3	Loss of Containment.....	7
3.2.4	Security and Vandalism .....	8
3.2.5	Flooding.....	8
<b>4.0</b>	<b>OPERATIONS &amp; CONTROLS .....</b>	<b>12</b>
4.1	Process Description.....	12
4.2	Process Flow Diagrams .....	13
4.3	Permitted Activities.....	15
4.4	Permitted Waste Types.....	15
4.5	Waste and Processed Waste Storage Arrangements.....	16
4.6	Waste Pre-acceptance .....	17

4.7	Waste Acceptance .....	18
4.7.1	Hours of Operation.....	18
4.7.2	Load Inspection and Waste Control .....	18
4.7.3	Means of Measurement.....	18
4.7.4	Waste Segregation .....	18
4.8	Site Infrastructure and Equipment.....	19
4.8.1	Site Identification Board.....	19
4.8.2	Plant and Equipment.....	19
<b>5.0</b>	<b>EMISSIONS AND MONITORING .....</b>	<b>20</b>
5.1	Surface Water and Groundwater.....	21
5.1.1	Internal Processing Area .....	20
5.1.2	External Storage Area.....	20
5.1.3	Containment Bunding .....	20
5.2	Sewer .....	21
5.3	Odour.....	21
5.4	Dust.....	21
5.5	Noise .....	22
5.6	Pests.....	22
5.7	Litter.....	23
5.8	Mud and Debris .....	23
<b>6.0</b>	<b>BEST AVAILABLE TECHNIQUES (BAT) .....</b>	<b>23</b>
<b>7.0</b>	<b>INFORMATION .....</b>	<b>42</b>
7.1	Reporting and Notifications .....	42
7.1.1	Changes in Technically Competent Persons .....	42
7.1.2	Waste Types and Quantities .....	42
7.1.3	Relevant Convictions .....	42
7.1.4	Notification of Change of Operator's or Holder's Details .....	42
7.1.5	Adverse Effects .....	42

## DOCUMENT REFERENCES

### TABLES

Table 1-1 Surrounding Land Uses

Table 3-1 Potentially Contaminating Liquids: Storage Arrangements

Table 4-1 Wastes Permitted to be Accepted

Table 4-2 Storage Times

Table 6-1 Compliance with BAT Conclusions

#### DRAWINGS

Drawing 001	Site Location Plan
Drawing 002	Site Layout and Environmental Permit Boundary
Drawing 003	Environmental Site Setting
Drawing 004	Site Drainage
Drawing 005	Detailed Site Layout & Fire Management

#### APPENDICES

Appendix A	Waste Classification Procedure
------------	--------------------------------

## 1.0 INTRODUCTION

AO Recycling Limited (AO) has retained SLR Consulting Limited (SLR) to prepare an Environmental Permit (EP) variation application for the Plastics Recycling Facility located at Stafford Park, Telford, Shropshire ('the Site'). The facility is currently permitted as a waste operation (ref EPR/HB3207LZ) which was issued on 28 February 2020 under the Environmental Permitting (England and Wales) Regulations 2016 (as amended).

During determination of the application for the current permit, the Environment Agency (EA) advised that the classification of plastics containing brominated fire retardants had changed to hazardous waste. Further, that wastes consisting of, containing or contaminated by Persistent Organic Pollutants (POPs) (which include fire retardants) must be dealt with in accordance with Article 7 of Regulation (EU) 2019/1021<sup>1</sup>.

Rather than amend the waste operation application to an installation application which may have prolonged the determination timescale, AO proposed to operate below the Industrial Emissions Directive (IED) installation thresholds for the treatment and storage of hazardous waste. Accordingly, the current permit is a waste operation which restricts the processing of hazardous plastics to a maximum of 10 tonnes per day with a limit of 50 tonnes of hazardous plastic to be stored on site at any one time.

AO are now applying to increase the permitted amounts of hazardous waste that can be treated and stored at the facility up to the maximum storage and treatment capacity of the site, which means that the thresholds within the Industrial Emissions Directive (IED) will be exceeded. Therefore, the permit will require a variation to change the activity to an installation and to authorise the following activities:

- Section 5.3 Disposal or recovery of hazardous waste Part A(1) (a) Disposal or recovery of hazardous waste with a capacity exceeding 10 tonnes per day involving one or more of the following activities- (ii) physico-chemical treatment; and
- Section 5.6 Temporary or underground storage of hazardous waste Part A(1) (a) temporary storage of hazardous waste with a total capacity exceeding 50 tonnes pending any of the activities listed in Sections 5.1, 5.2, 5.3 and paragraph (b) of this Section.

Installations are required to demonstrate that they are designed and operated in accordance with Best Available Techniques (BAT) as set out in the relevant BAT Reference document (Bref), which in this case is the revised Waste Treatment Bref published in August 2018.

This BAT-Operating Techniques (BAT-OT) document will update and supersede the existing Operating Techniques V5 document (OT) referenced in Table S1.2 of the current permit. In addition to the existing OT, it includes an assessment to demonstrate that the operating measures in place to control potential environmental risks from the treatment and storage activities comply with the relevant BAT requirements.

This BAT-OT document should be read in conjunction with the following document submitted with this application:

- Non-Technical Summary (reference 416.09242.00009/NTS);

and with the following documents which apply to the existing permit but remain unchanged by the proposed variation:

- Environmental Risk Assessment V3 (reference 416.09242.00006/ERA);
- Site Condition Report (reference 416.09242.00006/SCR);
- Fire Prevention Plan V6 (reference 416.09242.00006/FPP); and

---

<sup>1</sup> <https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32019R1021&from=EN>

- Associated Drawings including: Site Location Plan, Site Layout and Environmental Permit Boundary, Environmental Site Setting, Site Drainage and Detailed Site Layout & Fire Management Plan.

## 1.1 Report Structure

The BAT-OT is structured as follows:

- **Section 2** Management
- **Section 3** Accident Management
- **Section 4** Operations & Controls
- **Section 5** Emissions and Monitoring
- **Section 6** Best Available Techniques
- **Section 7** Information

## 1.2 Site Setting

The site address is 11, Stafford Park, Telford TF3 3AY and is located 2km to the east of the centre of Telford at National Grid Reference 371934, 308549.

The site is located within a commercial estate and is adjacent (south) of the M54 motorway. The site also lies adjacent (north) of the main railway line connecting to Telford Central. The site is circa 1.47 hectares in area and roughly rectangular in shape. The immediate land uses are shown in Table 1-1 below.

**Table 1-1 Land Uses surrounding the site**

Boundary	Description
North	Commercial properties
East	Stafford Park 11 (road), commercial properties beyond.
South	Main railway line, commercial properties beyond.
West	Commercial properties

The Site's location is illustrated on Drawing 001 and the Site Layout and Environmental Permit boundary is illustrated on Drawing 002. The surrounding land uses and local receptors within 500m are identified on Drawing 003 Environmental Site Setting, in addition to the cultural and natural heritage within 1km.

## 2.0 MANAGEMENT

### 2.1 Management System

AO Recycling operates an in-house Environmental Management System (EMS) which ensures that:

- The risks that the activities pose to the environment are identified;
- The measures that are required to minimise the risks are identified;
- The activities are managed in accordance with the management system;

- Performance against the management system is audited at regular intervals; and
- The EP is complied with.

The company's Environmental Policy clearly defines AO Recycling's commitment to continual improvement, to minimising the impact of the site activities on the environment and to complying with relevant legislation and other requirements to which the company subscribes.

The EMS is supplemented by this document which outlines the proposed operating techniques at the site and demonstrates conformance with the requirements of relevant and published EA Guidance.

## 2.2 Management Structure and Responsibilities

The General Manager is responsible for day to day operations and compliance with the EP.

Whenever the site is open to receive wastes, or will carry out any of the waste handling operations, it will be supervised by at least one member of staff who is suitably trained and fully conversant with the requirements of the permit regarding:

- Waste acceptance and control procedures;
- Operational controls;
- Maintenance;
- Record-keeping;
- Emergency action plans; and
- Notifications to the EA.

## 2.3 Technical Competence and Training

The site will be managed by sufficient staff, competent to operate the site. The management system ensures the following are in place:

- All staff have clearly defined roles and responsibilities;
- Records are maintained of the skills required for each post;
- Records are maintained of the training and relevant qualifications undertaken by staff to meet the requirement of each post; and
- Operations are governed by Standard Operating Procedures (SOP).

An assessment of staff training needs is carried out to identify the posts for which specific environmental awareness training is needed, and to determine the scope and level of such training. The assessment of training needs will be reviewed on an annual basis.

The training programme ensures that relevant staff are aware of the following:

- Regulatory implications of the EP for the site and their specific work activity;
- All potential environmental effects from operations under normal and abnormal circumstances;
- The need to report deviations from the EP; and
- Prevention of accidental emissions and the action to be taken should accidental emissions occur.

Appointed sub-contractors required to undertake work on site will be subject to a site induction which addresses site requirements with respect to environmental protection and will be managed in accordance with the site's permit to work system.



## 2.4 Site Security

In order to prevent unauthorised access, a number of security measures are in place at the site including:

- Security fencing surrounding the site;
- Security lighting; and
- 24-hour CCTV surveillance, monitored from the Halesfield, Telford site (operational 24 hours).

Site boundary checks are completed weekly to ensure site security is maintained. Any defects or damage which may compromise the integrity of the enclosure will be made secure by temporary repair by the end of the working day. Permanent repairs will be affected as soon as practicable.

All inspections and any defects, damage or repairs will be recorded in the site diary.

## 2.5 Permit Surrender

To assist in EP surrender, records will be maintained to demonstrate how the land beneath the site has been protected at all times between the date of EP issue and the end of EP operations.

Records to be maintained include:

- Maintenance of impermeable surfacing;
- Maintenance of drains and sumps; and
- Actions taken to clean up incidents and spillages.

## 2.6 Display of Environmental Permit

A copy of the EP is kept available for reference by all staff and contractors whose work may have an impact on the environment.

## 2.7 Managing Documentation and Records

Controls are in place to ensure that all documents are issued, revised and maintained in a consistent fashion.

The documents included within the scope of the controls are as follows:

- Policies;
- Responsibilities;
- Targets;
- Maintenance records;
- Procedures;
- Monitoring records;
- Results of audits;
- Results of reviews;
- Complaints and incident records; and
- Training records.

Records are made and kept up to date on a daily basis to reflect deliveries, on-site treatment and dispatches. All records relating to waste acceptance are recorded digitally, stored on AO's central system but accessible at Stafford Park. Records will be kept for a minimum of 2 years after the waste has been removed off site.

## 2.8 Reporting Non-Compliance and Taking Corrective Action

Procedures will ensure appropriate corrective action is taken in response to problems identified at the site. The procedures will ensure that non-conformances are reported, investigated and rectified, and that failures and weaknesses are prevented. The following aspects are considered:

- Actual or potential non-compliance;
- System failure discovered at internal audit;
- Suppliers or subcontractors breaking the agreed operating rules;
- Incidents, accidents, and emergencies;
- Malfunction, breakdown or failure of plant;
- Other operational system failure; and
- Complaints.

The action taken in response to the non-conformance may include:

- Obtaining additional information on the nature and extent of the non-conformance;
- Discussing and testing alternative solutions;
- Modifying procedures and responsibilities;
- Seeking approval for additional resources and training; and
- Contacting suppliers and contractors (as applicable).

## 2.9 Auditing and Legal Compliance

There is a formalised internal auditing procedure to ensure the facility is audited at defined intervals and that the progress of corrective and preventative action is monitored.

## 2.10 Monitoring, Measuring and Reviewing Environmental Performance

The management review procedure will assess environmental performance, and ensure any necessary actions are taken.

## 2.11 Operational Control, Preventative Maintenance and Calibration

The management system complements operational procedures so as to ensure effective control of site operations, the use of approved suppliers and contract services, the maintenance of operational equipment and the calibration of any monitoring equipment.

All plant and equipment will be subject to a programme of planned preventative maintenance which will follow the inspection and maintenance schedule recommended by the manufacturer.

## 2.12 Design and Construction Quality Assurance

All relevant elements of the site (not already constructed) are designed in accordance with recognised standards, methodologies and practices.

The design process uses a risk-based approach and will be appropriately documented using drawings, specifications and method statements to provide an adequate audit trail.

Construction Quality Assurance (CQA) plans will govern all construction activities necessary in the future. These CQA plans will be prepared by competent and suitably qualified persons.

A competent and suitably qualified person will supervise the construction activities.

## 3.0 Accident Management Plan

AO Recycling recognise the importance of the prevention of accidents that may have environmental consequences and that it is crucial to limit those consequences.

An accident management plan is implemented and maintained at the site to ensure the site and site staff are fully prepared for any such incidents. The accident management plan will be reviewed at least every four years or as soon as practicable after an incident, with changes made accordingly to minimise the risk of occurrence.

The following section has been prepared in accordance with EPR Guidance EPR5.06, EA Accident prevention and Management Plan guidance and the revised Waste Incineration Bref.

The following accident management plan describes the techniques that are implemented to minimise the risks posed to the environment. Activities affecting the health and safety (H&S) of operatives, contractors and visitors will be separately managed in compliance with H&S regulation and company H&S Policy.

### 3.1 Risk Estimation

This Accident Management Plan has adopted a risk assessment approach to each potential hazard by combining the probability and consequence of the potential risk to give an estimation of the risk prior to any mitigation measures. The risk management measures, which are designed to reduce the likelihood of occurrence, are then detailed followed by an estimation of the actual risk post-mitigation (Residual Risk Rating).

### 3.2 Hazard Identification

The following potential hazards have been identified:

- Unauthorised waste;
- Fire;
- Loss of containment - spillage and leakage;
- Security and vandalism; and
- Flooding.

The following sections summarise the measures necessary to minimise the potential causes and consequences of accidents.

#### 3.2.1 Unauthorised Waste

The acceptance of unauthorised materials could result in unacceptable wastes being stored and treated at the Site. All wastes will be subject to inspection and checking against the agreed quality specification. In the event that unauthorised waste is delivered to the Site, the waste will be segregated and stored in a designated quarantine/isolation area prior to export from Site.

#### 3.2.2 Fire

The Site will operate under the approved Fire Prevention Plan (FPP), a copy of which is available on Site.

The FPP follows EA guidance for FPPs<sup>2</sup> and details the required mitigation and management methods to prevent a fire of combustible materials stored on Site. The information contained within the FPP aims to meet the 3 main objectives of the EA’s FPP Guidance:

- Minimise the likelihood of a fire happening;
- Aim for a fire to be extinguished within 4 hours; and
- Minimise the spread of fire within the Site and to neighbouring sites.

### 3.2.3 Loss of Containment

Loss of containment could lead to spillage and leakage of potentially contaminating liquids. Table 3-1 below includes the location and storage arrangement of all potentially contaminating liquids on Site.

**Table 3-1  
 Potentially Contaminating Liquids: Storage Arrangements**

Type	Storage Location	Storage Arrangement
Spent calcium Carbonate Solution	External to North West corner of process building	Sludge settlement and filtration tank
Calcium Carbonate Solution	Within process building	Flexible Intermediate Bulk Container (FIBC)
Diesel	North-west corner of the site	2,500 litre Commercial Bunded Fuel Tank. The tank is surrounded by a leakage containment bund capable of containing at least 110% of the volume of the largest container within the bund.

To prevent loss of containment and minimise the risk and impact of releases the following measures are implemented:

- Storage vessels: storage tanks are constructed to the appropriate British Standard;
- Inspection: tanks are inspected visually on a regular basis by the Site staff to ensure the continued integrity of the tanks, and identify the requirement for any remedial action;
- Spill kits: materials suitable for absorbing and containing minor spillages will be maintained on Site; and
- Monitoring techniques: Site staff undertake regular monitoring for evidence of spillage and leakage.

In the event of any potentially polluting leak or spillage occurring on Site, the following action will be taken:

- Minor spillages will be cleaned up immediately, using sand or proprietary absorbents suitable for the purpose of managing spillages. The resultant materials will be placed into containers and will then be removed from Site and disposed of at a suitably permitted facility. The incident will be logged in the Site diary;
- Any dry wastes spilled on Site will be collected and transported to the appropriate area of the Site; and
- In the event of a major spillage, which is causing or is likely to cause polluting emissions to the environment, immediate action will be taken to contain the spillage and prevent liquid from entering

<sup>2</sup> Fire Prevention Plans: Environmental Permits, May 2018.

surface water or drains. If necessary, the site connection to foul sewer will be isolated using the shut-off valve in order to contain contaminated water. Contaminated water and any resultant materials used for clean-up of the spillage will be cleared immediately and placed in containers for offsite disposal, and the EA will be informed.

### 3.2.4 Security and Vandalism

The Site has a number of security measures in place to limit the likelihood of a security breach or vandalism including:

- Perimeter fencing with a gated entrance which is locked if appropriate;
- Lockable doors on the processing building and office/welfare facilities;
- CCTV coverage of all external areas;
- Monitored alarm system for the processing building;
- Inspection and maintenance procedures; and
- A visitor sign in system.

In the event of a breach of security at the Site, the cause will be investigated, and appropriate mitigation measures implemented. This will be recorded in the Daily Site Log. Records maintained will include inspections and maintenance of doors and locks, breaches of security, investigations and actions taken.

### 3.2.5 Flooding

There are no surface water features within the Site boundary.

According to the EA flood map for planning service, the Site lies within a Flood Zone 1 and therefore has a low probability of flooding.

In the event that a flood occurs, the site will be evacuated. Following a flood incident, the Site Manager is responsible for carrying out an investigation to determine that the site can be brought back into operation safely and for carrying out any necessary prior remedial action.

## 3.3 Materials Input

The feedstock for the process is entirely composed of waste plastic. There are no significant amounts of non-waste raw materials used at the site. In addition to the waste plastic feedstock, the only other material used directly in the process is:

- Calcium carbonate (stored in Flexible Intermediate Bulk Containers located within the process building) used for dosing the density separator, with an estimated use of 72 tonnes per year.

Diesel is also used for vehicles handling materials on site. This is stored in a 2500l commercial bunded fuel tank located in the north-west corner of the site, with an estimated use of 30 tonnes per year.

### 3.3.1 Raw Materials Selection

The waste types constitute only plastics that are derived from end-of-life refrigerators, WEEE and other large domestic applications following processing at AO's Halesfield appliance recycling facility and other similar shredding facilities. AO has strict waste pre-acceptance and waste acceptance procedures in place to ensure that only waste that meets the required specification is received on site. This ensures that the feedstock is of a known composition and has characteristics which are compatible with the design of the separation process.

Calcium carbonate is required for dosing of the density separator in order to achieve the required separation performance and has been selected in accordance with the manufacturer's recommendations.

### 3.3.2 Water use

The process includes a wet density separation process consisting of separation tanks filled with mains water and calcium carbonate solution. The solution is recirculated in a closed loop via the sludge tank located externally to the process building, which separates solid material via a cloth filter and returns cleaned solution to the densifier. The closed loop system ensures that water usage is minimised and it is anticipated that 4,032m<sup>3</sup> of mains water will be used per annum. Water usage will be reviewed every year as part of the site's EMS to ensure it is minimised wherever practicable and that the best environmental options are being used at the installation.

## 3.4 Waste Minimisation

### 3.4.1 Waste Streams

The plastic treatment process itself will not produce waste during normal operation as it is based on separating the plastics and sorting into different grades for recovery.

However, the following residual wastes are produced:

- Prior to treatment of the plastic feedstock in the wet density separator, small quantities of incidental fines and non-plastic material are screened using a vibrating conveyor. These are collected in bags and stored in the process building prior to transfer off-site for treatment and disposal at an appropriately permitted facility; and
- Spent calcium carbonate sludge from the wet density separation process is periodically removed from the sludge tank and transferred off-site for treatment and disposal at an appropriately permitted facility.

Hazardous plastics are processed separately from non-hazardous plastics such that all material, including residues, are segregated by waste type.

The Site Manager will be responsible for implementing waste management requirements and ensuring that storage areas are labelled and maintained in an appropriate location and condition. Staff will be responsible for ensuring waste is correctly consigned and for notifying the General Manager when bays or containers may contain inappropriate items. Any containers, storing waste produced on site, will be segregated, labelled, covered and maintained in a satisfactory condition. Storage areas will be protected from vandalism by site security arrangements. Storage areas will be designated and provided with appropriate signage.

### 3.4.2 Waste minimisation

The purpose of the waste treatment facility is to separate plastic feedstocks into different grades to provide feedstock to plastics recovery facilities elsewhere. This enables the plastic waste to be moved further up the waste hierarchy than would be the case if it were disposed to landfill or subject to a thermal process for energy recovery. Therefore, given the nature of the process, the opportunity for waste minimisation is limited to the relatively small quantities of waste residues produced by the ancillary activities.

The following techniques will be in place to minimise the production of waste residues:

- Waste pre-acceptance and on-site acceptance checks are in place to ensure that the incoming material does not contain fines or non-plastic waste in quantities greater than incidental levels;
- Dosing of the density separator with calcium carbonate will be carefully controlled, as the separation performance depends on achieving the optimum density;
- Process controls will be in place to minimise the creation of rejects or unacceptable materials;

- Routine maintenance of plant and equipment will be carried out to prevent breakdowns and potential for 'off-spec' material; and
- Waste residue production will be reviewed every year as part of the site's EMS to ensure they are minimised wherever practicable and that the best environmental options are being used at the installation

## 3.5 Energy Efficiency

AO Recycling is not a participant in a Climate Change Levy Agreement (CCA).

### 3.5.1 Energy Management System

Energy management will be reviewed every year as part of the site's EMS. This will be undertaken to confirm that the best environmental options are being used for energy usage at the installation and may also include, where applicable, energy reduction targets.

It is considered that present arrangements represent BAT.

### 3.5.2 Basic Energy Requirements - Energy Efficiency

Energy use will be managed in conjunction with the EMS and reviewed as part of AO's energy procedure at least annually as one of the significant environmental aspects of operation. The purpose of the procedure is to reduce energy usage within the Company.

Energy specification and consumption for each operational unit for the treatment equipment will be described within the Operations Manual.

Periodic energy audits will be undertaken and appropriate training for key staff will take place as required. Areas where new technology provides an opportunity for energy reduction will be identified and incorporated into the EMS environmental management plan.

The installation and equipment will be operated and maintained to minimise the use and loss of energy. The treatment process is automated to improve process efficiency, product quality and workplace safety. The following basic energy control measures will be put in place:

- process equipment and vehicles when not in use will be turned off;
- operating housekeeping and maintenance measures will be in place for:
  - operation of motors and drives;
  - lubrication to avoid friction losses;
  - other maintenance relevant to the site; and
  - mobile plant in efficient running condition.
- With respect to energy efficient design, where the purchase of new equipment is required consideration will be given to energy efficiency; and
- doors and windows will be kept closed when heating or air conditioning is on and thermostats will be kept as low as possible, consistent with comfort levels.

Current EA guidance on energy efficiency<sup>3</sup> requires that a facility must show that operation is in accordance with the energy efficiency measures listed in section 3 of the Reference Document on Best Available Techniques for Energy Efficiency.

The processing equipment to be used has been selected on the basis of meeting the required technical and environmental performance appropriate for the activity, including consideration of energy efficiency. It is considered that the equipment complies with the appropriate energy efficiency measures described in the guidance.

The energy efficiency requirements set out in the Bref for this sector are considered in section 6 of this document. It is considered that the site complies with these requirements.

---

<sup>3</sup> <https://www.gov.uk/guidance/energy-efficiency-standards-for-industrial-plants-to-get-environmental-permits>



## 4.0 Operations & Controls

### 4.1 Process Description

#### Waste Feedstocks

The proposed facility will receive mixed plastic wastes originating from end-of-life refrigerators, WEEE and other large domestic applications following processing at AO's Halesfield appliance recycling facility and other similar shredding facilities. The mixed plastics consist mostly of the following types:

- Acrylonitrile butadiene styrene (ABS);
- Polyvinyl chloride (PVC);
- Polystyrene (PS);
- Polypropylene (PP);
- Filled Polypropylene (PP10/PP20);
- Polyurethane (PU); and
- High density polyethylene (HDPE).

Some of plastics from the treatment of small domestic appliances which contain brominated fire retardants are classified as hazardous waste; the rest are non-hazardous waste.

Hazardous and non-hazardous plastic wastes will be stored separately and will be segregated at all times to avoid mixing. Plastics will be treated in separate batches consisting wholly of either hazardous or non-hazardous types; the outputs and residues from their processing will be collected and managed separately so that segregation is maintained throughout the processing and no mixing occurs between the two classifications. Other than these segregation measures, the process description in this section is the same whether treating batches of hazardous or non-hazardous plastic waste.

As the mixed plastic waste results from the processing of appliances in a metal shredder, it may contain a small amount of residual non-plastic material. Most of this will have been removed at the producer site, but there may be residual non-plastic 'incidentals' present such as metal, wire, wood, stones, glass or other fine material within the feedstock.

Incoming mixed plastic and processed plastic is stored in external bays and all waste treatment will take place inside the process building. The site and building layout is shown in Drawing 02.

#### Initial Waste Screening

Incoming waste plastic is transferred from the external bays into the process building by a front-end loader where it is placed loose within one of two pre-feed bays. From there it is transferred to a feed hopper and into a conveyor with a vibrating screen to remove any dust and fine material that might be present. Any dust arisings are collected in the bay below the conveyor and stored in a bag, either within the allocated area within the process building or in an external storage bay, before being transferred off site for treatment and disposal.

#### Wet Density Separation

The separation tanks are filled with mains water and calcium carbonate solution. The solution is recirculated in a closed loop via the sludge tank located externally to the process building, which separates solid material via a cloth filter and returns cleaned solution to the densifier. There is no process effluent except in the case that the densifier separator tanks are drained for maintenance purposes. In this case, the tanks are drained via the sludge tank, such that the effluent is filtered before being discharged to foul sewer.

Procedures are in place to monitor and optimise the densifier operating parameters to ensure the effectiveness of the process in separating out different plastics fractions.

### **Size Reduction**

The ABS, PS and PP outputs from the density separators pass through a centrifuge to remove moisture. The material is then transferred by augers to granulators, and then through a cyclone and dedusting equipment to remove residual liquid and solid residue

### **Optical & Electrostatic Sorting**

The ABS, PS and PP fraction is then processed by optical sorter to separate into white and non-white fractions. Each of these fractions then undergoes a final electrostatic separation process with sorts each stream into separate PS, ABS and PP-20 fractions.

### **Storage & Transfer**

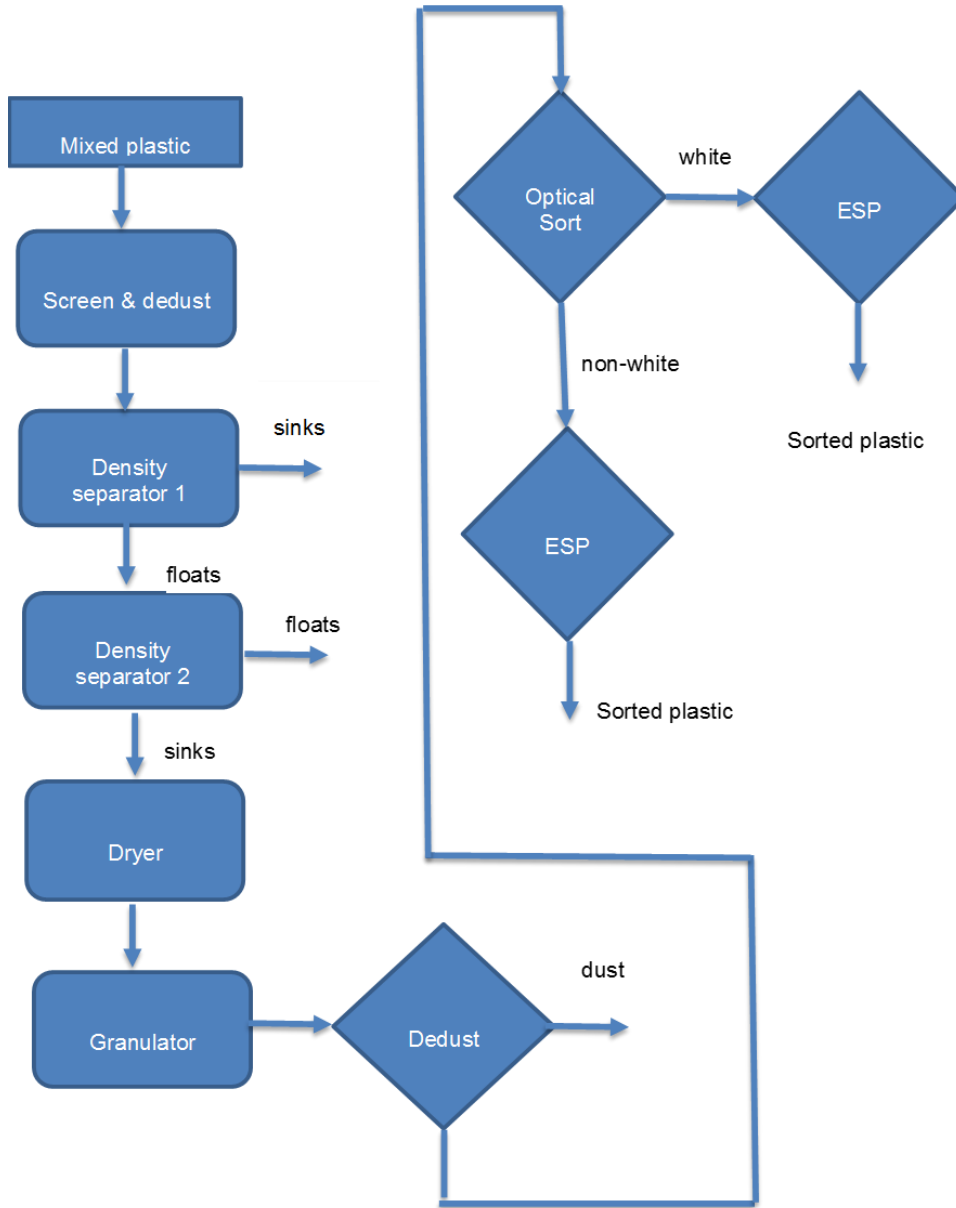
The resulting plastic fractions are then bagged for transfer off site for further processing and recovery.

The process building and storage areas benefit from impermeable surfacing and a sealed drainage system with connection to foul sewer.

## **4.2 Process Flow Diagrams**

A schematic process flow diagram for the plastics recycling process is shown in Figure 4-1 below.

**Figure 4-1**  
**Stafford Park Plastics Recycling Facility: Mixed Plastics Separation Process**



### 4.3 Permitted Activities

The Site will accept up to 50,000 tonnes per annum (tpa) of mixed plastic waste originating from end-of-life refrigerators, WEEE and other domestic appliances for treatment in a staged separation process. The maximum storage capacity for waste types is anticipated to be up to 2,592 tonnes at any one time.

Some plastics from end-of-life domestic appliances will contain brominated fire retardants and are classified as hazardous waste. The quantity of hazardous plastic waste accepted for treatment varies and could be up to the maximum capacity and storage amounts described above. These activities fall under the Industrial Emissions Directive (IED) and will be regulated as an installation according to the following descriptions in Schedule 1 of the EPR:

- Section 5.3 Disposal or recovery of hazardous waste Part A(1) (a) Disposal or recovery of hazardous waste with a capacity exceeding 10 tonnes per day involving one or more of the following activities- (ii) physico-chemical treatment; and
- Section 5.6 Temporary or underground storage of hazardous waste Part A(1) (a) temporary storage of hazardous waste with a total capacity exceeding 50 tonnes pending any of the activities listed in Sections 5.1, 5.2, 5.3 and paragraph (b) of this Section.

Treatment of non-hazardous plastics is regulated as a waste management operation under the EPR.

The existing treatment and storage activities taking place at the site fall within the following waste management codes specified in Annex I and Annex II of the Waste Framework Directive 2008:

- **R3:** Recycling/reclamation of organic substances which are not used as solvents (including composting and other biological transformation processes);
- **R4:** Recycling/reclamation of metals and metal compounds; and
- **R13:** Storage of wastes pending any of the operations numbered R1 to R12 (excluding temporary storage, pending collection, on the site where it is produced).

### 4.4 Permitted Waste Types

The list of wastes permitted to be accepted is shown in Table 4-1 below.

**Table 4-1  
 Wastes Permitted to be Accepted**

EWC Code	EWC Description	Additional Information
16	WASTES NOT OTHERWISE SPECIFIED IN THE LIST	
16 02	Wastes from electrical and electronic equipment	
16 02 15*	Hazardous substances removed from discarded equipment	plastics from domestic appliances only – limited to less than 10 tonnes per day and less than 50 tonnes stored at any one time
16 02 16	Components removed from discarded equipment other than those mentioned in 16 02 15	non-hazardous plastics from domestic appliances only
19	WASTES FROM WASTE MANAGEMENT FACILITIES, OFF-SITE WASTE WATER TREATMENT PLANTS AND THE PREPARATION OF WATER FOR HUMAN CONSUMPTION AND WATER FOR INDUSTRIAL USE	

EWC Code	EWC Description	Additional Information
19 02	Wastes from physico/chemical treatments of waste (including dechromatation, decyanidation, neutralisation)	
19 02 04*	Premixed wastes composed of at least one hazardous waste	plastics from domestic appliances only – limited to less than 50 tonnes per annum and less than 10 tonnes stored at any one time
19 10	wastes from shredding of metal-containing wastes	
19 10 06	Other fractions other than those mentioned in 19 10 15	non-hazardous plastics resulting from shredding of domestic appliances only
19 12	wastes from the mechanical treatment of waste (for example sorting, crushing, compacting, pelletising) not otherwise specified	
19 12 04	Plastic and rubber	non-hazardous plastics resulting from shredding of domestic appliances only
19 12 11*	Other wastes (including mixtures of materials) from mechanical treatment of waste containing hazardous substances	plastics from domestic appliances only – limited to less than 10 tonnes per day and less than 50 tonnes stored at any one time
19 12 12	other wastes (including mixtures of materials) from mechanical treatment of wastes other than those mentioned in 19 12 11	non-hazardous plastics resulting from shredding of domestic appliances only

## 4.5 Waste and Processed Waste Storage Arrangements

The external waste storage area is comprised of 10 bays and a general waste skip located to the south and west of the processing building in the main yard area.

Processed material is bagged as part of the treatment and either stored within the designated area within the process building or stored within bags in Bays 1-5.

Residual waste, such as small amounts of incidental waste material arising from the processing operation, is bagged and either stored within the designated area within the process building or stored within bags in Bays 1-5.

Unprocessed plastic feedstock is stored in Bays 6-10 in loose or bagged form.

All waste (bagged or loose) is stored to a maximum height of 3.8m.

Hazardous plastic waste is segregated from non-hazardous plastic waste and stored in separate bays. There are no storage 'incompatibility' issues relating to the two waste types which would present an increased risk to the environment.

The external storage bays are located on impermeable surfacing and benefit from bunding and kerbing to contain leaks and spillages.

The following wastes are stored within the process building:

- In-bound plastic is stored in loose form in 2 x 5m by 5m bays with concrete block walls, prior to feeding into the feed hopper;
- Small amounts of incidental dust arisings from the initial screening of incoming plastics are collected in bags of maximum height 2m, which are stored within the designated 10m x 2m floor area; and

- ‘Work in progress’ waste which is either only part-treated or is fully treated but waiting for quality assurance checks, is stored in bags of maximum height 2m, within a 10m x 18m floor area.

All bays and storage areas have been designed to ensure that the storage volumes are compliant with EA’s FPP guidance, as described in the site’s FPP<sup>4</sup>.

**Table 4.2**  
**Waste Storage Areas: Waste Types, Storage Time**

Identifier	Waste Type	Max Storage
External Storage		
Bay 1	Bagged Processed Plastic/ Processed Waste	3 months
Bay 2	Bagged Processed Plastic/ Processed Waste	3 months
Bay 3	Bagged Processed Plastic/ Processed Waste	3 months
Bay 4	Bagged Processed Plastic/ Processed Waste	3 months
Bay 5	Bagged Processed Plastic/ Processed Waste	3 months
Bay 6	Loose/Bagged Unprocessed Plastic	3 months
Bay 7	Loose/Bagged Unprocessed Plastic	3 months
Bay 8	Loose/Bagged Unprocessed Plastic	3 months
Bay 9	Loose/Bagged Unprocessed Plastic	3 months
Bay 10 <sup>5</sup>	Loose/Bagged Unprocessed Plastic	3 months
General Waste Skip	General Site Generated Waste	14 days
Internal Storage		
Inbound Plastic Waste Bays	Loose plastic waste	1 month
Bagged Dusty Waste Arisings	Dusty waste collected from the pre-screening process	3 months
‘Work-in-progress’ Plastic	Bagged part-treated waste or waste awaiting QA	1 month

## 4.6 Waste Pre-acceptance

The site will treat both non- hazardous and hazardous plastic wastes sourced from sites treating end-of-life domestic appliances. AO has pre-acceptance checks and feedstock specifications in place for consignments of

<sup>4</sup> 416.09242.00006/FPP Fire Prevention Plan V6

<sup>5</sup> Bay 10 is an irregular shape as illustrated on Drawing 002 Site Layout. The dimensions given in the table represent the maximum dimensions of the shape, but the volume listed has been calculated taking into account the differing dimensions of the bay to provide an accurate storage volume.

hazardous plastics to ensure that the plastic waste is only derived from the processing of small domestic appliances and has been segregated from other non-hazardous plastics and non-plastic material.

## 4.7 Waste Acceptance

### 4.7.1 Hours of Operation

During commissioning and initial operation, the facility will operate between 09:00 and 17:00. However, following Site commissioning and initial operation the Site will be operational 24 hours a day, seven days a week.

### 4.7.2 Load Inspection and Waste Control

All vehicles bringing waste material to the Site will report to the weighbridge where the load will be visually inspected, where possible, to confirm its description and composition against the relevant accompanying documentation. All wastes will undergo a further visual inspection during unloading.

Waste will only be accepted at the Site if the description in the accompanying documentation is in accordance with the EP and that on-site inspection confirms the waste is consistent with the description provided.

Should the wastes be found not to conform during the initial visual inspection, then the details will be recorded, and the vehicle turned away. If wastes have already been discharged and are deemed not to conform or otherwise not be permitted, then the waste will be:

- Reloaded on to the delivery vehicle; or
- Removed to a designated quarantine area as appropriate.

Records of non-compliant waste received at the Site will include details on:

- The quantity;
- Characteristics;
- Origin;
- Delivery date and time; and
- The identity of the producer and carrier.

Waste will not be accepted unless the Site is adequately resourced to receive the waste.

A record will be kept in the Site diary of all rejected wastes. In the event of non-conformance, the waste producer and the EA will be notified.

### 4.7.3 Means of Measurement

The quantity of waste accepted and despatched from the facility will be measured via the weighbridge.

### 4.7.4 Waste Segregation

To prevent risk of contamination between hazardous and non-hazardous plastic:

- Plastics classed as hazardous will be stored in dedicated bays and segregated from other wastes at all times, both pre- and post-treatment;
- Plastics classed as hazardous will be treated in separate batches from non-hazardous plastics; and
- Residues from the processing of hazardous plastic wastes will be collected separately and segregated from residues from the processing of non-hazardous waste plastics.

#### 4.7.5 POPs Regulations

Wastes consisting of or containing or contaminated by POPs must be dealt with in accordance with Article 7 of Regulation (EU) 2019/1021 (POPs Regulation). The activities carried out at the site only comprise separation of plastics containing POPs, which are then transferred off-site to appropriately regulated facilities for recovery or disposal.

Accordingly, the site ensures that appropriate procedures are in place to prevent risk of contamination between hazardous and non-hazardous plastics. Appendix A includes the Waste Classification Procedure statement agreed with the EA which describes the procedures in place at the site to comply with the POPs Regulation.

### 4.8 Site Infrastructure and Equipment

#### 4.8.1 Site Identification Board

A Site identification board which is easily readable from outside the entrance during hours of daylight is provided by the main Site entrance.

The identification board is inspected once per week as a minimum. In the event of damage or defect that significantly affects the legibility of the board it will be repaired or replaced within a timescale agreed upon with the EA.

The board displays the following information:

- Site name and address;
- Permit holder;
- Permit number;
- Emergency contact name and telephone number;
- EA national telephone numbers; and
- Days and hours the Site is open to receive waste.

#### 4.8.2 Plant and Equipment

The following mobile plant is used on Site (list not exhaustive):

- 1 digger/loading shovel;
- 2 fork-lift trucks; and
- 1 scissor lift.

All Site plant and Machinery are subject to a preventative maintenance schedule in line with the manufacturers' specifications.

In summary, the following provisions are implemented:

- Plant maintenance schedules using the manufacturer's recommendations;
- Pre-use checks are completed prior to using any plant or equipment;
- Defects are reported and actions taken based on priorities;
- All vehicles onsite are fitted with portable fire extinguishers; and
- Mobile plant is kept away from combustible waste. This is achieved by allocating areas for mobile plant for storage when not in use.



## 4.9 Site Drainage

The site benefits from impermeable surfacing throughout and sealed drainage for the collection of foul, surface water and process effluent as shown on Drawing 004. All discharge is to sewer.

The site does not include a separate sealed drainage system for the acceptance of hazardous plastic wastes. This is because the hazardous properties of the waste relate to fire-retardant chemicals that are bound within the plastic and are highly unlikely to pose a direct source of pollution. In addition, the risk of plastics entering the drainage system is very low due to their large particle size.

### 4.9.1 Internal Processing Area

The process building benefits from impermeable surfacing. Any runoff generated from periodic wash downs will be kept within the building.

### 4.9.2 External Storage Area

The yard area benefits from impermeable surfacing throughout, enclosed by kerbing, and slopes slightly to the west. This therefore will provide full containment of firewater on the Site. Additionally, the Site benefits from a containment bund next to Bay 1 which is capable of containing fire water within the immediate waste storage area.

Any firewater or runoff will drain to the drainage system which comprises two strands: a foul drainage and surface water drainage.

The surface water drainage system contains an underground retention chamber with an oil interceptor. The oil interceptor enables the removal of sediment and oil from the water. Additionally, the retention chamber provides containment for any dirty runoff and benefits from a valve which can be closed to prevent water leaving the site. This has the dual benefit of preventing contaminated water running to surface water receptors, and also ensuring firewater pools on site for reuse by the Fire Service.

### 4.9.3 Containment Bunding

Chemicals or fuel used on Site are stored in an appropriate tank that benefits from a bund with the capacity to store 110% of the tank capacity. Bunds are:

- Impermeable and resistant to the stored materials;
- Have no outlet;
- Be designed to catch leaks from tanks or fittings;
- Have a capacity greater than 110% of the largest tank or 25% of the total tankage (whichever is greater);
- Any pipework routed within bunded areas will not penetrate the base or walls of the containment;
- Have tanker connection points within the bund; and
- Be subject to regular visual inspection.

## 5.0 EMISSIONS AND MONITORING

There are no point source emissions to air, surface water, groundwater or land.

## 5.1 Surface Water and Groundwater

The Site is operated in a manner which will prevent fugitive emissions to surface water and groundwater.

The Site has the benefit of impermeable surfacing throughout. Site drainage is shown on Drawing 004 and is managed as described in Section 4.9 above. The site has provisions to isolate and contain contaminated water on site if an incident occurs. Therefore, it is considered that the risk of fugitive emissions to surface water and groundwater is low.

## 5.2 Sewer

The site surface water, process effluent and foul drainage discharge to sewer. The Site holds a discharge consent from Severn Trent Water for the release of trade effluent to foul sewer.

The site will also investigate the presence of polybrominated diphenyl ethers (PDBE) persistent organic pollutants (POPs), tetrabromobisphenol A and antimony in surface drainage and process water and have procedures in place to prevent these releases to foul sewer if necessary.

## 5.3 Odour

The plastics wastes accepted for treatment are not expected to be odorous in nature.

Nonetheless, to prevent the generation or release of odour from the Site, the following Site management methods are adhered to:

- All treatment of waste takes place within the main processing building. The main processing building benefits from roller shutter doors that remain closed unless a delivery is taking place;
- Waste handling is kept to a minimum: the waste will only be moved when loaded into the process plant or when being loaded onto a vehicle for removal off Site;
- Site operatives ensure that the waste arriving on Site is not overly odorous or showing signs of infestation;
- If any problems associated with odour are identified, appropriate remedial and corrective action will be implemented as soon as practicable, including the removal of any odorous waste where necessary; and
- Daily olfactory inspection is carried out by Site staff during their normal working activities if potentially odorous waste is stored on Site.

If significant odours are detected, investigations will be undertaken to determine the cause and appropriate remedial action taken.

## 5.4 Dust

The incoming plastic waste originates from a metal shredding process and may contain small residual amounts of fine material; therefore, there is a small risk that airborne dust emissions may occur. The following measures are taken to minimise the risk of dust emissions during storage, handling and treatment of waste:

- Waste that arrives will be within sheeted or enclosed vehicles, if possible, to ensure no escape of dust during transit;
- Waste is stored in dedicated external storage bays which will minimise the mobilisation of dust (if any is present);
- In the event of high wind speeds, which could potentially mobilise plastic waste of large particle size, loose waste in bays will be covered if necessary;

- Storage areas will benefit from regular cleaning, on a daily basis as a minimum;
- Drop heights and double handling of materials will be kept to a minimum;
- All treatment of plastic will take place in the enclosed building;
- The main processing building benefits from roller shutter doors that remain closed except when waste is being transferred; and
- Any fines and dust generated will be captured and retained within the building or within enclosed flexible intermediate bulk containers. Fines removed through mechanical treatment or generated as a result of drying will be removed from the process, loaded into bags and stored either within the designated area within the process building or in external bays prior to removal from Site to a suitably licenced facility.

Dust will be further minimised through the following measures:

- Speed limits will be implemented on Site for all vehicles to minimise the mobilisation of particulates;
- Site access roads and operational areas will be maintained and swept regularly to reduce dust generation;
- Transfer of dusty materials to containers/skips will be undertaken within the confines of a building; and
- Daily visual inspection of the Site and Site boundary will be carried out by Site personnel.

## 5.5 Noise

Noise will be minimised through the following measures:

- All waste treatment activities will be undertaken within the main processing building;
- All equipment will be maintained and operated in accordance with manufacturer's instructions and maintained in good working order;
- Speed limits will be implemented for vehicles using the Site and traffic calming measures will be implemented to enforce speed limits;
- Site access and operational areas will be maintained and repaired to minimise emissions of noise due to uneven and poor surfacing;
- All Site personnel will be trained in the need to minimise Site noise and are responsible for monitoring and reporting excessive noise when carrying out their everyday roles; and
- If a complaint is received, it will be logged in the Site diary. The Site Manager will be responsible for investigating the complaint and taking action to identify the source of the noise and implement remedial measures where appropriate.

## 5.6 Pests

The wastes accepted at the Site will not be susceptible to pests due to minimal contamination with organic residues. The facility will be inspected by both Site management and operatives for infestations of pests, vermin and insects on a daily basis. If the presence of pests can be attributed to a particular batch of waste, this waste will be removed from Site as soon as practicable.

A specialist pest control contractor will be deployed if required.

## 5.7 Litter

The mixed plastics accepted for treatment at the facility are types that are relatively dense, such that the risk of litter from loose plastic and other debris is low. All treatment of waste takes place within an enclosed building. The building benefits from roller shutter doors that will remain closed unless a delivery is taking place.

The Site boundary is checked daily, and any windblown litter will be collected and disposed of appropriately.

It is the responsibility of the Site staff to constantly monitor the Site for any signs of escaping materials either from within the Site or from vehicles delivering or removing materials to and from the Site.

Records of daily inspections and remedial actions are maintained within the Site diary.

## 5.8 Mud and Debris

The access road and surrounding land is an industrial park. Due to the nature of the waste accepted on Site, mud and debris does not pose a significant risk. However, within the Site the following measures are taken to prevent the deposition or tracking of mud or debris from the Site onto public areas or highways:

- Site roads are maintained free of significant quantities of mud and debris;
- All operational areas are subject to monitoring by staff throughout their shift to identify accumulations of mud or debris requiring remedial action;
- Where necessary road cleaning equipment is deployed; and
- All vehicles leaving operational areas are checked for cleanliness and if necessary will be cleaned to ensure that they are clear of loose waste.

If mud, debris or waste arising from the Site is deposited onto public areas outside the Site, the following remedial measures will be implemented:

- The affected public areas outside the Site will be cleaned;
- Traffic will be isolated from sources of mud and debris within the Site to prevent further tracking of mud and debris, and measures will be taken to clear any such sources as soon as practicable; and
- Provision will be made for road sweepers on the Site access roads to stop any mud being carried onto public roads, and bowsers made available to damp down areas during dry periods to ensure that dust is not a problem.

## 6.0 Best Available Techniques (BAT)

The proposed variation is to allow the site to treat hazardous wastes at a capacity greater than 10 tonnes per day, and to store more than 50 tonnes of hazardous waste on site at any one time. These activities are subject to the requirements of the IED, and as such, the activities must be operated in accordance with BAT to prevent and minimise pollution of the environment.

Indicative BAT for these activities is set out in the revised Waste Treatment Bref (the Bref).<sup>6</sup> This section assesses the techniques proposed for the site against the relevant BAT Conclusions (BATc) within the Bref, which include the following:

---

<sup>6</sup> EC Joint Research Centre Best Available Techniques (BAT) Reference Document for Waste Treatment, 2018, EUR 29362 EN

- General requirements (BAT 1 – BAT 24); and
- Mechanical Treatment of Waste (BAT 25 only<sup>7</sup>).

Table 6-1 provides a description of the techniques proposed at the site and how these meet the requirements of each of the BAT conclusions listed above.

---

<sup>7</sup> The remaining BAT conclusions in this section of the Bref (besides BAT 25) apply only to the mechanical treatment in shredders of metal waste and are not relevant to plastics separation and granulation.

**Table 6-1  
 Compliance with BAT Conclusions**

No	BAT Conclusion	Compliance
GENERAL CONSIDERATIONS		
BAT 1	<i>In order to improve the overall environmental performance, BAT is to implement and adhere to an environmental management system (EMS)<sup>8</sup></i>	The Site is operated in accordance with an in-house Environmental Management System (EMS) as described in Section 2. The Management System complies with all aspects listed within BAT 1.
BAT 2	<p><i>In order to improve the overall environmental performance of the plant, BAT is to use all of the techniques given below:</i></p> <ul style="list-style-type: none"> <li>• <i>Set up and implement waste characterisation and pre-acceptance procedures</i></li> <li>• <i>Set up and implement waste acceptance procedures</i></li> <li>• <i>Set up and implement a waste tracking system and inventory</i></li> <li>• <i>Set up and implement an output quality management system</i></li> <li>• <i>Ensure waste segregation</i></li> <li>• <i>Ensure waste compatibility prior to mixing or blending of waste</i></li> <li>• <i>Sort incoming solid waste</i></li> </ul>	<ul style="list-style-type: none"> <li>• Waste Characterisation and Pre-acceptance Procedures</li> </ul> <p>AO has pre-acceptance checks and feedstock specifications in place for consignments of hazardous plastics to ensure that the plastic waste is of the required composition and is only derived from the processing of domestic appliances and has been segregated from other non-hazardous plastics and non-plastic material.</p> <ul style="list-style-type: none"> <li>• Waste Acceptance Procedure</li> </ul> <p>The Site’s pre-acceptance procedures confirm that the characteristics of the waste are established at the pre-acceptance stage before delivery to site. Deliveries to the Site are pre-booked with checks undertaken to ensure that the Site will have capacity and staff resources to receive each delivery. Waste acceptance procedures are described in Section 4.7 and include:</p> <ul style="list-style-type: none"> <li>○ Load inspection;</li> <li>○ Rejection procedures;</li> <li>○ Measurement; and</li> <li>○ Segregation procedures.</li> </ul>

<sup>8</sup> Refer to the BAT Reference document for features to be incorporated in the EMS.

No	BAT Conclusion	Compliance
		<p>Checks and inspections are undertaken by a member of staff who is suitably qualified and trained.</p> <ul style="list-style-type: none"> <li>• Waste Tracking and Inventory System</li> </ul> <p>AO Recycling employs a waste tracking system which stores all the information on each batch throughout the waste stream’s lifecycle on Site. This includes information gained through characterisation and verification of wastes undertaken at the pre-acceptance and acceptance stages.</p> <ul style="list-style-type: none"> <li>• Output Quality Management System</li> </ul> <p>The Site is operated in accordance with an ISO 9001:2015 QMS. This includes procedures to ensure that the separation processes are monitored and adjusted to ensure that optimum separation of plastics is effected.</p> <ul style="list-style-type: none"> <li>• Waste Segregation</li> </ul> <p>Procedures included within the Site’s management system describe when and where different waste types are to be stored. To prevent risk of contamination between hazardous and non-hazardous plastic:</p> <ul style="list-style-type: none"> <li>• Plastics classed as hazardous will be stored in dedicated bays and segregated from other wastes at all times, both pre- and post-treatment;</li> <li>• Plastics classed as hazardous will be treated in separate batches from non-hazardous plastics; and</li> <li>• Residues from the processing of hazardous plastic wastes will be collected separately and segregated from residues from the processing of non-hazardous waste plastics.</li> </ul> <ul style="list-style-type: none"> <li>• Waste Compatibility</li> </ul> <p>Hazardous plastic waste is segregated from non-hazardous plastic waste at all times; it is treated in separate batches and stored in separate bays. The waste is not mixed and there</p>

No	BAT Conclusion	Compliance
		<p>are no compatibility issues relating to the two waste types which would present an increased risk to the environment.</p> <ul style="list-style-type: none"> <li>• Sorting of incoming solid waste</li> </ul> <p>The site only accepts hazardous or non-hazardous plastic wastes originating from processes treating end-of-life refrigerators, WEEE and other domestic appliances. This waste stream has the potential to contain small, incidental amounts of residual dust, metal or wood. Visual inspections will be carried out of waste loads accepted at the site to ensure no gross contamination is evident. Before the waste enters the wet-densifier it is screened via a vibrating conveyor to minimise dust carryover.</p>
BAT 3	<p><i>In order to facilitate the reduction of emissions to water and air, BAT is to establish and to maintain an inventory of waste water and waste gas streams, as part of the environmental management system (see BAT 1), that incorporates all of the following features:</i></p> <ul style="list-style-type: none"> <li><i>(i) information about the characteristics of the waste to be treated and the waste treatment processes...</i></li> <li><i>(ii) information about the characteristics of the waste water streams....</i></li> <li><i>(iii) information about the characteristics of the waste gas streams....</i></li> </ul>	<p>The wet densifier separation process uses a solution of mains water and calcium carbonate. The solution is recirculated in a closed loop via the sludge tank located externally to the process building, which separates solid material via filter cloth and returns cleaned solution to the densifier. This minimises water usage.</p> <p>There is no process effluent except in the case that the densifier separator tanks are drained for maintenance purposes. In this case, the tanks are drained via the sludge tank, and the cleaned effluent is discharged to foul sewer.</p> <p>The layout is shown in Drawing 04.</p> <p>AO Recycling maintain an inventory of wastewater as part of the site's EMS including volume discharged and characteristics.</p> <p>The site will also investigate the presence of PDBE POPs, tetrabromobisphenol A and antimony in surface drainage and process water and will have procedures in place to prevent these releases to foul sewer if necessary (this is currently an improvement condition in the existing permit).</p> <p>There are no waste gas streams present at the site.</p>



No	BAT Conclusion	Compliance
BAT 4	<p><i>In order to reduce the environmental risk associated with the storage of waste, BAT is to use all of the techniques given below.</i></p> <ul style="list-style-type: none"> <li><i>a) Optimised storage locations</i></li> <li><i>b) Adequate storage capacity</i></li> <li><i>c) Safe storage operation</i></li> <li><i>d) Separate area for storage and handling of packaged hazardous waste</i></li> </ul>	<p><b>a) Optimised storage locations</b></p> <p>The site is located in an industrial estate and there are no sensitive environmental receptors in the immediate vicinity (500m) other than workplaces.</p> <p>Storage arrangements are optimised to minimise transport distances on site. Waste is transferred directly from storage to the treatment process within the process building and unnecessary handling is avoided.</p> <p><b>b) Adequate storage capacity</b></p> <p>Deliveries to the Site are pre-booked with checks undertaken to ensure that the Site will have capacity and staff resources to receive each delivery. The Site benefits from a waste inventory and a waste tracking system designed to ensure the Site avoids reaching overcapacity, and to ensure that suitable arrangements are made for its transfer off Site before this point is reached.</p> <p>Waste will be stored on site for a maximum residence time of three months.</p> <p>Procedures included within the Site’s management system describe when and where different waste types are to be stored.</p> <p><b>c) Safe Storage Operation</b></p> <p>Plastic feedstocks and treated wastes are stored in dedicated storage bays / storage areas. The nature of the waste means that it is not particularly sensitive to ambient conditions; nonetheless, all waste stockpiles are visually inspected and the temperature of the waste is monitored by hand-held infra-red devices at least once per shift.</p> <p>Chemicals or fuel used on Site are stored in an appropriate tank that benefits from a bund with the capacity to store 110% of the tank capacity. Bunds are:</p> <ul style="list-style-type: none"> <li>• Impermeable and resistant to the stored materials;</li> <li>• Have no outlet;</li> <li>• Be designed to catch leaks from tanks or fittings;</li> </ul>

No	BAT Conclusion	Compliance
		<ul style="list-style-type: none"> <li>• Have a capacity greater than 110% of the largest tank or 25% of the total tankage (whichever is greater);</li> <li>• Any pipework routed within bunded areas will not penetrate the base or walls of the containment;</li> <li>• Have tanker connection points within the bund; and</li> <li>• Be subject to regular visual inspection.</li> </ul> <p><b>d) Separate Area for Storage and Handling of Packaged Hazardous Waste</b></p> <p>The site only accepts hazardous waste in the form of plastics containing brominated fire retardants, which are sourced from processes treating end-of-life domestic appliances. Pre-acceptance checks are carried out to ensure that the source and characteristics of waste delivered to site are known. Hazardous plastic waste is stored and treated separately from non-hazardous plastic waste at all stages of the process.</p>
BAT 5	<p><i>In order to reduce the environmental risk associated with the handling and transfer of waste, BAT is to set up and implement handling and transfer procedures.</i></p>	<p>AO Recycling minimise the environmental risk associated with the handling and transfer of waste by adhering to set handling and transfer procedures detailed in their site's Environmental Management System. AO ensure all site operatives undergo induction and training, with periodic refreshment, as relevant to their role.</p> <p>AO Recycling employs a waste tracking system which stores all the information on each batch throughout the waste stream's lifecycle on Site. All vehicles bringing waste material to the Site report to the weighbridge where the load is visually inspected, where possible, to confirm its description and composition against the relevant accompanying documentation. All wastes undergo a further visual inspection during unloading.</p> <p>Waste is only accepted at the Site if the description in the accompanying documentation is in accordance with the EP and that on-site inspection confirms the waste is consistent with the description provided.</p> <p>To prevent loss of containment and minimise the risk and impact of spillages, the following measures are implemented:</p>

No	BAT Conclusion	Compliance
		<ul style="list-style-type: none"> <li>• Storage vessels: storage tanks are constructed to the appropriate British Standard;</li> <li>• Inspection: tanks are inspected visually on a regular basis by the Site staff to ensure the continued integrity of the tanks, and identify the requirement for any remedial action;</li> <li>• Spill kits: materials suitable for absorbing and containing minor spillages will be maintained on Site; and</li> <li>• Monitoring techniques: Site staff undertake regular monitoring for evidence of spillage and leakage.</li> </ul> <p>In the event of any potentially polluting leak or spillage occurring on Site, the following action will be taken:</p> <ul style="list-style-type: none"> <li>• Minor spillages will be cleaned up immediately, using sand or proprietary absorbents suitable for the purpose of managing spillages. The resultant materials will be placed into containers and will then be removed from Site and disposed of at a suitably permitted facility. The incident will be logged in the Site diary;</li> <li>• Any dry wastes spilled on Site will be collected and transported to the appropriate area of the Site; and</li> <li>• In the event of a major spillage, which is causing or is likely to cause polluting emissions to the environment, immediate action will be taken to contain the spillage and prevent liquid from entering surface water or drains. If necessary, the site connection to foul sewer will be isolated using the shut-off valve in order to contain contaminated water. Contaminated water and any resultant materials used for clean-up of the spillage will be cleared immediately and placed in containers for offsite disposal, and the EA will be informed.</li> </ul>

No	BAT Conclusion	Compliance
		Hazardous plastic waste is stored and treated separately from non-hazardous plastic waste at all stages of the process. There is no mixing of wastes.
BAT 6	<i>For relevant emissions to water as identified by the inventory of waste water streams (see BAT 3), BAT is to monitor key process parameters (e.g. waste water flow, pH, temperature, conductivity, BOD) at key locations (e.g. at the inlet and/or outlet of the pre-treatment, at the inlet to the final treatment, at the point where the emission leaves the installation).</i>	As described under BAT 3, the site operates a closed-loop process and only discharges waste water to sewer when the densifier tanks are emptied for maintenance.  AO will investigate the presence of PDBE POPs, tetrabromobisphenol A and antimony in surface drainage and process water and will have procedures in place to prevent these releases to foul sewer if necessary (this is currently an improvement condition in the existing permit).
BAT 7	<i>BAT is to monitor emissions to water with at least the frequency given below, and in accordance with EN standards. If EN standards are not available, BAT is to use ISO, national or other international standards that ensure the provision of data of an equivalent scientific quality.</i>	As described under BAT 3, the site operates a closed-loop process and only discharges waste water to sewer when the densifier tanks are emptied for maintenance.  AO will investigate the presence of PDBE POPs, tetrabromobisphenol A and antimony in surface drainage and process water and will have procedures in place to prevent these releases to foul sewer if necessary (this is currently an improvement condition in the existing permit). Should monitoring be necessary as a result of the investigations, AO will ensure that the relevant provisions are provided and an assessment made against relevant parameters within BAT 7.
BAT 8	<i>BAT is to monitor channelled emissions to air with at least the frequency given below, and in accordance with EN standards. If EN standards are not available, BAT is to use ISO, national or other international standards that ensure the provision of data of an equivalent scientific quality.</i>	Not applicable. There are no point source emissions to air resulting from the activities.
BAT 9	<i>BAT is to monitor diffuse emissions of organic compounds to air from the regeneration of spent solvents, the decontamination of equipment containing POPs with solvents, and the physico-chemical</i>	Not applicable. There are no activities involving solvents at the site.

No	BAT Conclusion	Compliance
	<i>treatment of solvents for the recovery of their calorific value, at least once per year using one or a combination of the techniques given.</i>	
BAT 10	<i>BAT is to periodically monitor odour emissions.</i>	<p>Not applicable. The plastics wastes accepted for treatment are not expected to be odorous in nature.</p> <p>The applicability of BAT 10 is restricted to cases where an odour nuisance at sensitive receptors is expected and/or has been substantiated. If significant odours were to be detected, investigations would be undertaken to determine the cause and appropriate remedial action taken.</p>
BAT 11	<i>BAT is to monitor the annual consumption of water, energy and raw materials as well as the annual generation of residues and waste water, with a frequency of at least once per year.</i>	<p>AO Recycling conduct monitoring of the annual consumption of water, energy and raw materials by recording all inputs to the process. Furthermore, monitoring is also conducted for the annual generation of residues and waste water via the recording of all process output. To aid this, an inventory and tracking system is kept of all inputs and outputs. Monitoring will consider any significant changes relating to the process.</p>
BAT 12	<p><i>In order to prevent or, where that is not practicable, to reduce odour emissions, BAT is to set up, implement and regularly review an odour management plan, as part of the environmental management system (see BAT 1), that includes all of the following elements:</i></p> <ul style="list-style-type: none"> <li>• a protocol containing actions and timelines;</li> <li>• a protocol for conducting odour monitoring as set out in BAT 10;</li> <li>• a protocol for response to identified odour incidents, e.g. complaints;</li> <li>• an odour prevention and reduction programme designed to identify the source(s);</li> </ul>	<p>Not applicable. The plastics wastes accepted for treatment are not expected to be odorous in nature.</p> <p>The applicability of BAT12 is restricted to cases where an odour nuisance at sensitive receptors is expected and/or has been substantiated.</p> <p>If significant odours were to be detected, investigations would be undertaken to determine the cause and appropriate remedial action taken.</p>

No	BAT Conclusion	Compliance
	<p>to characterise the contributions of the sources; and to implement prevention and/or reduction measures.</p>	
<p>BAT 13</p>	<p><i>In order to prevent or, where that is not practicable, to reduce odour emissions, BAT is to use one or a combination of the techniques given below.</i></p> <ul style="list-style-type: none"> <li><i>a) Minimising residence times</i></li> <li><i>b) Using chemical treatment</i></li> <li><i>c) Optimising aerobic treatment</i></li> </ul>	<p>Not applicable. The plastics wastes accepted for treatment are not expected to be odorous in nature.</p> <p>The applicability of BAT 13 is restricted to cases where an odour nuisance at sensitive receptors is expected and/or has been substantiated.</p> <p>If significant odours were to be detected, investigations would be undertaken to determine the cause and appropriate remedial action taken.</p>
<p>BAT 14</p>	<p><i>In order to prevent or, where that is not practicable, to reduce diffuse emissions to air, in particular of dust, organic compounds and odour, BAT is to use an appropriate combination of the techniques given below</i></p> <ul style="list-style-type: none"> <li><i>a) Minimising the number of potential diffuse emission sources</i></li> <li><i>b) Selection and use of high-integrity equipment</i></li> <li><i>c) Corrosion prevention</i></li> <li><i>d) Containment, collection and treatment of diffuse emissions</i></li> <li><i>e) Dampening</i></li> <li><i>f) Maintenance</i></li> <li><i>g) Cleaning of waste treatment and storage areas</i></li> <li><i>h) Leak detection and repair (LDAR) programme</i></li> </ul>	<p>The risk of diffuse emissions to air of dust, organic compounds and odour is low due to the nature of the plastic feedstocks. Wastes accepted for treatment are not expected to be odorous in nature. The particle size of treated waste is 10mm and incoming wastes are larger than this; therefore, the plastics are not 'dusty' in themselves. However, traces of dust may be present, as the material is sourced from metal shredding processes. Organic compounds (embedded as brominated fire retardants within the plastics) may also be present.</p> <ul style="list-style-type: none"> <li>a) Incoming waste is delivered in enclosed vehicles in loose or bagged form. Loose waste and bags are stored in bays to minimise wind-borne dust. All treatment takes place within the process building. All processed waste is stored in bags. Residual waste, including any incidental dusty arisings, is stored in bags.</li> <li>b) Not applicable; the process does not generate odorous emissions.</li> <li>c) All plant and equipment will be subject to a programme of planned preventative maintenance which will follow the inspection and maintenance schedule recommended by the manufacturer. This will include corrosion prevention where applicable.</li> </ul>

No	BAT Conclusion	Compliance
		<p>d) The risk of fugitive dust emissions is low, as the site does not process or produce dusty wastes. Nonetheless, the site implements the following measures to control risk of dust:</p> <ul style="list-style-type: none"> <li>○ Waste that arrives is within sheeted or enclosed vehicles, if possible, to ensure no escape of dust during transit;</li> <li>○ Waste is stored in dedicated external storage bays which will minimise the mobilisation of dust (if any is present);</li> <li>○ In the event of high wind speeds, which could potentially mobilise plastic waste of large particle size, loose waste in bays will be covered if necessary;</li> <li>○ Storage areas benefit from regular cleaning, on a daily basis as a minimum;</li> <li>○ Drop heights and double handling of materials are kept to a minimum;</li> <li>○ All treatment of plastic takes place in the enclosed building;</li> <li>○ The main processing building benefits from roller shutter doors that remain closed except when waste is being transferred; and</li> <li>○ All fines and dust generated are captured and retained within the building or within enclosed flexible intermediate bulk containers. Fines removed through mechanical treatment or generated as a result of drying are removed from the process, loaded into bags and stored either within the designated area within the process building or in external bays prior to removal from Site to a suitably licenced facility.</li> <li>○ Speed limits are implemented on Site for all vehicles to minimise the mobilisation of particulates;</li> <li>○ Site access roads and operational areas are maintained and swept regularly to reduce dust generation;</li> </ul>

No	BAT Conclusion	Compliance
		<ul style="list-style-type: none"> <li>○ Residual dust from the process is bagged and stored within the building or in external bays;</li> <li>○ Transfer of dusty materials to containers/skips (should this be needed) is undertaken within the confines of a building; and</li> <li>○ Daily visual inspection of the Site and Site boundary is carried out by Site personnel.</li> </ul> <p>e) Not applicable. The process does not handle dusty wastes.</p> <p>f) All plant and equipment is subject to a programme of planned preventative maintenance which follows the inspection and maintenance schedule recommended by the manufacturer.</p> <p>g) Daily visual inspection of the Site and Site boundary is carried out by Site personnel. Storage areas benefit from regular cleaning, on a daily basis as a minimum.</p> <p>h) Not applicable. The waste and process does not produce gaseous/vaporous emissions.</p>
BAT 15	<p>BAT is to use flaring only for safety reasons or for non-routine operating conditions (e.g. start-ups, shutdowns) by using both of the techniques given below:</p> <ul style="list-style-type: none"> <li>a. Correct plant design</li> <li>b. Plant management</li> </ul>	Not applicable: the process does not include flaring.
BAT 16	<p>In order to reduce emissions to air from flares when flaring is unavoidable, BAT is to use both of the techniques given below:</p> <ul style="list-style-type: none"> <li>a. Correct design of flaring devices</li> </ul>	Not applicable: the process does not include flaring.



No	BAT Conclusion	Compliance
	<p>b. Monitoring and recording as part of flare management</p>	
<p>BAT 17</p>	<p><i>In order to prevent or, where that is not practicable, to reduce noise and vibration emissions, BAT is to set up, implement and regularly review a noise and vibration management plan, as part of the environmental management system (see BAT 1), that includes all of the following elements:</i></p> <ol style="list-style-type: none"> <li><i>I. a protocol containing appropriate actions and timelines;</i></li> <li><i>II. a protocol for conducting noise and vibration monitoring;</i></li> <li><i>III. a protocol for response to identified noise and vibration events, e.g. complaints;</i></li> <li><i>IV. a noise and vibration reduction programme designed to identify the source(s), to measure/estimate noise and vibration exposure, to characterise the contributions of the sources and to implement prevention and/or reduction measures</i></li> </ol>	<p>The risk of noise impact from the site is low. The site is not located near residential receptors and all processing occurs within an enclosed building. The Site EMS includes procedures for the monitoring and review of noise emissions from the site. If a complaint is received, it will be logged in the Site diary. The Site Manager will be responsible for investigating the complaint and taking action to identify the source of the noise and implement remedial measures where appropriate.</p>
<p>BAT 18</p>	<p><i>In order to prevent or, where that is not practicable, to reduce noise and vibration emissions, BAT is to use one or a combination of the techniques given below:</i></p> <ol style="list-style-type: none"> <li><i>a. Appropriate location of equipment and buildings</i></li> <li><i>b. Operational measures</i></li> </ol>	<p>The risk of noise impact from the site is low. The site is not located near residential receptors and all processing occurs within an enclosed building. Noise will be minimised through the following measures:</p> <ul style="list-style-type: none"> <li>• All waste treatment activities are undertaken within the main processing building;</li> </ul>

No	BAT Conclusion	Compliance
	<p><i>c. Low-noise equipment</i></p> <p><i>d. Noise and vibration control equipment</i></p> <p><i>e. Noise attenuation</i></p>	<ul style="list-style-type: none"> <li>• All equipment is maintained and operated in accordance with manufacturer's instructions and maintained in good working order;</li> <li>• Speed limits are implemented for vehicles using the Site and traffic calming measures will be implemented to enforce speed limits;</li> <li>• Site access and operational areas are maintained and repaired to minimise emissions of noise due to uneven and poor surfacing;</li> <li>• All Site personnel are trained in the need to minimise Site noise and are responsible for monitoring and reporting excessive noise when carrying out their everyday roles.</li> </ul>
BAT 19	<p><i>In order to optimise water consumption, to reduce the volume of waste water generated and to prevent or, where that is not practicable, to reduce emissions to soil and water, BAT is to use an appropriate combination of the techniques given below.</i></p> <p><i>a. Water Management</i></p> <p><i>b. Water Recirculation</i></p> <p><i>c. Impermeable Surface</i></p> <p><i>d. Techniques to reduce the likelihood and impact of overflows and failures from tanks and vessels</i></p> <p><i>e. Roofing of waste storage and treatment areas</i></p> <p><i>f. Segregation of water streams</i></p> <p><i>g. Adequate drainage infrastructure</i></p> <p><i>h. Design and maintenance provisions to allow detection and repair of leaks</i></p>	<p>a) Water consumption is monitored and the process uses a closed loop system;</p> <p>b) The process uses a closed-loop system i.e. recirculation of water;</p> <p>c) The site benefits from an impermeable concrete surface throughout;</p> <p>d) The site benefits from kerbing and sealed drainage system, with an isolation valve, capable of containing any spillages or contaminated surface water (eg in the event of a fire incident) from leaving the site.</p> <p>Fuel used on Site will be stored in an appropriate tank that benefits from a bund with the capacity to store 110% of the tank capacity. Bunds will be:</p> <ul style="list-style-type: none"> <li>○ Impermeable and resistant to the stored materials;</li> <li>○ Have no outlet;</li> <li>○ Be designed to catch leaks from tanks or fittings;</li> <li>○ Have a capacity greater than 110% of the largest tank or 25% of the total tankage (whichever is greater);</li> <li>○ Any pipework routed within bunded areas will not penetrate the base or walls of the containment;</li> </ul>

No	BAT Conclusion	Compliance
	<p>i. <i>Appropriate buffer storage capacity</i></p>	<ul style="list-style-type: none"> <li>○ Have tanker connection points within the bund; and</li> <li>○ Be subject to regular visual inspection.</li> </ul> <p>Procedures are in place to prevent the overfilling of tanks.</p> <p>e) All treatment takes place within an enclosed building. External waste storage areas are not covered. However, the risk of contamination of surface water is expected to be low. Although the site accepts hazardous plastics containing brominated fire retardants, these are embedded in the plastic and are not expected to leach. Nonetheless, AO will investigate the presence of PDBE POPs, tetrabromobisphenol A and antimony in surface drainage and process water and will put procedures in place to prevent these releases to foul sewer if necessary (this is currently an improvement condition in the existing permit).</p> <p>f) All surface water and process effluent is treated as trade effluent and discharged to sewer for subsequent treatment by the sewage undertaker. There is no continuous process effluent. The risk of contamination of surface water and process effluent is expected to be insignificant, subject to confirmation of the investigation described in (e).</p> <p>g) The site benefits from a sealed drainage system as shown on Drawing 004.</p> <p>h) All plant and equipment will be subject to a programme of planned preventative maintenance which will follow the inspection and maintenance schedule recommended by the manufacturer.</p> <p>i) There is no continuous process effluent which would require buffer storage capacity. However, the site benefits from kerbing and sealed drainage system, with an isolation valve, capable of containing any spillages or contaminated surface water (eg in the event of a fire incident) from leaving the site.</p>
BAT 20	<p>In order to reduce emissions to water, BAT is to treat waste water using an appropriate combination of the techniques given below:</p> <p>a. Equalisation</p>	<p>The process employs a closed loop system and effluent is only discharged when the densifier tanks are emptied periodically for maintenance purposes.</p> <p>In this case, the effluent would be discharged from the sludge dewatering tank which includes a cloth filter to screen any solids.</p>

No	BAT Conclusion	Compliance
	b. Neutralisation c. Physical separation d. Adsorption e. Distillation/rectification f. Precipitation g. Chemical oxidation h. Chemical reduction i. Evaporation j. Ion exchange k. Stripping l. Activated sludge process m. Membrane bioreactor n. Nitrification/denitrification when the treatment includes biological treatment o. Coagulation and flocculation p. Sedimentation q. Filtration r. Flotation	<p>No further treatment is proposed at this stage, pending the outcome of the existing requirement of the improvement condition to investigate the presence of PDBe POPs, tetrabromobisphenol A and antimony in surface drainage and process water. All surface water and process effluent is discharged as trade effluent for subsequent treatment by the sewage undertaker.</p>
Bat 21	<p><i>In order to prevent or limit the environmental consequences of accidents and incidents, BAT is to use all of the techniques given below as part of the accident management plan:</i></p>	<p>The Site has a number of security measures in place to limit the likelihood of a security breach or vandalism including:</p> <ul style="list-style-type: none"> <li>• Perimeter fencing with a gated entrance which is locked if appropriate;</li> <li>• Lockable doors on the processing building and office/welfare facilities;</li> </ul>

No	BAT Conclusion	Compliance
	<p><i>a. Protection measures</i></p> <p><i>b. Management of incidental/accidental emissions</i></p> <p><i>c. Incident/Accident registration and assessment system</i></p>	<ul style="list-style-type: none"> <li>• CCTV coverage of all external areas;</li> <li>• Monitored alarm system for the processing building;</li> <li>• Inspection and maintenance procedures; and</li> <li>• A visitor sign in system.</li> </ul> <p>The site has an approved Fire Prevention Plan in place, which describes the measures in place to prevent fires and to manage the environmental risks if a fire occurs. This includes isolation of the site drainage system and containment of fire-water on site.</p> <p>Procedures within the site’s EMS ensure appropriate corrective action is taken in response to problems identified at the site, including accidents and incidents. The procedures will ensure that non-conformances are reported, investigated and rectified, and that failures and weaknesses are prevented. The following aspects are considered:</p> <ul style="list-style-type: none"> <li>• Actual or potential non-compliance;</li> <li>• System failure discovered at internal audit;</li> <li>• Suppliers or subcontractors breaking the agreed operating rules;</li> <li>• Incidents, accidents, and emergencies;</li> <li>• Malfunction, breakdown or failure of plant;</li> <li>• Other operational system failure; and</li> <li>• Complaints.</li> </ul> <p>The action taken in response to the non-conformance may include:</p> <ul style="list-style-type: none"> <li>• Obtaining additional information on the nature and extent of the non-conformance;</li> <li>• Discussing and testing alternative solutions;</li> <li>• Modifying procedures and responsibilities;</li> </ul>

No	BAT Conclusion	Compliance
		<ul style="list-style-type: none"> <li>• Seeking approval for additional resources and training; and</li> <li>• Contacting suppliers and contractors (as applicable).</li> </ul>
BAT 22	<i>In order to use materials efficiently, BAT is to substitute materials with waste.</i>	The process does not use significant amounts of non-waste material and therefore it is considered that there is limited scope for replacement.
BAT 23	<i>In order to use energy efficiently, BAT is to use both of the techniques given below.</i> <ol style="list-style-type: none"> <li><i>Energy Efficiency Plan</i></li> <li><i>Energy Balance Record</i></li> </ol>	An Energy Efficiency Plan and energy balance record are in place at the Site.
BAT 24	<i>In order to reduce the quantity of waste sent for disposal, BAT is to maximise the reuse of packaging, as part of the Residues Management Plan.</i>	Where possible, packaging (such as storage bags) will be re-used.
<b>BAT CONCLUSIONS FOR THE MECHANICAL TREATMENT OF WASTE<sup>9</sup></b>		
BAT 25	<i>In order to reduce emissions to air of dust, and of particulate-bound metals, PCDD/F and dioxin-like PCBs, BAT is to apply BAT 14d [Containment, collection and treatment of diffuse emissions] and to use one or a combination of the techniques given below:</i> <ol style="list-style-type: none"> <li><i>Cyclone</i></li> <li><i>Fabric filter</i></li> <li><i>Wet scrubbing</i></li> <li><i>Water injection into the shredder</i></li> </ol>	<p>The treatment of plastics includes sorting followed by a granulation process.</p> <p>Granulation is carried out on wet plastics following the wet density sorting stage. Water and small solid particles are subsequently removed by a cyclone and dedusting equipment. The combination of wet material and cyclone reduces the risk of dust and other emissions from the process.</p> <p>All mechanical treatment (granulation) takes place within the process building and there are no point source emissions to air.</p>

<sup>9</sup> The remaining BAT conclusions in this section of the Bref in addition to BAT 25, apply only to the mechanical treatment in shredders of metal waste.

## 7.0 INFORMATION

All relevant notifications and submissions to the EA regarding the Site will be made in writing and quote the EP reference number and the name of the EP holder.

Records will be maintained for at least 6 years, however in the case of off-site environmental effects, and matters which affect the condition of land and groundwater, the records are to be kept until permit surrender. Duty of Care records will be kept for a minimum of 2 years.

### 7.1 Reporting and Notifications

#### 7.1.1 Changes in Technically Competent Persons

The EA will be informed in writing of any changes in the technically competent management of the Site and the name of any incoming person, together with evidence that such person has the required technical competence.

#### 7.1.2 Waste Types and Quantities

A summary report of waste types and quantities accepted and removed from the Site for each quarter, will be submitted to the EA within 1 month of the end of the quarter unless otherwise required by the EP conditions.

#### 7.1.3 Relevant Convictions

The EA will be notified of the following events:

- AO Recycling Limited being convicted of any relevant offence; and
- Any appeal against a conviction for a relevant offence and the results of such an appeal.

#### 7.1.4 Notification of Change of Operator's or Holder's Details

The EA will be notified of the following:

- Any change in the operator's trading name, registered name or registered office address; and
- Any steps taken with a view to the company going into administration, entering into a company voluntary arrangement or being wound up.

#### 7.1.5 Adverse Effects

The EA must be notified without delay following the detection of the following:

- Any malfunction, breakdown or failure of equipment or techniques;
- Any accident;
- Fugitive emissions which have caused, is causing or may cause significant pollution; and
- Any significant adverse environmental and health effect.

## APPENDIX A

### Waste Classification Procedure

AO Recycling Limited  
416.09242.00008 Stafford Park Plastics Recycling Facility Permit Application  
September 2019

Additional statement requested by EA as part of extension to the Schedule 5 Notice dated 05/08/2019

#### Waste Classification Procedure

Most of the waste plastics treated at Stafford Park Plastics Recycling Facility will be non-hazardous. However, the site will also store up to 50 tonnes at any one time, and treat up to 10 tonnes per day, of plastics which are classed as hazardous waste (HW) due to the presence of brominated fire-retardants.

AO Recycling confirm that wastes consisting of or containing or contaminated by POPs shall be dealt with in accordance with Article 7 of Regulation (EU) 2019/1021 <https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32019R1021&from=EN>

To prevent risk of contamination between hazardous and non-hazardous plastic AO will carry out the following procedure, or any other process agreed in writing with the Environment Agency:

- All wastes received on site will be subject to rigorous waste acceptance procedures, including visual inspection, to ensure that they conform with the description in the accompanying documentation and are in accordance with the waste types permitted;
- Pre-acceptance checks and feedstock specifications will in place to ensure that the hazardous plastic waste destined for receipt at Stafford Park is derived only from the processing of small domestic appliances, has been segregated from other non-hazardous plastics and non-plastic material and is of a suitable quality for treatment at the site;
- Plastics containing brominated fire retardants will be stored in dedicated bays and segregated from other wastes at all times, both pre- and post-treatment;
- Plastics containing brominated fire retardants will be treated in separate batches from non-hazardous plastics;
- Treated plastics containing brominated fire retardants will be transferred off-site to appropriately licensed facilities for further processing/recovery; and
- Residues from the processing of plastics containing brominated fire retardants will be collected separately and segregated from residues from the processing of non-hazardous waste plastics. They will be sampled and tested for classification purposes, before being transferred off-site to appropriately licensed facilities for further treatment or disposal.



## EUROPEAN OFFICES

### United Kingdom

#### AYLESBURY

T: +44 (0)1844 337380

#### BELFAST

T: +44 (0)28 9073 2493

#### BRADFORD-ON-AVON

T: +44 (0)1225 309400

#### BRISTOL

T: +44 (0)117 906 4280

#### CAMBRIDGE

T: + 44 (0)1223 813805

#### CARDIFF

T: +44 (0)29 2049 1010

#### CHELMSFORD

T: +44 (0)1245 392170

#### EDINBURGH

T: +44 (0)131 335 6830

#### EXETER

T: + 44 (0)1392 490152

#### GLASGOW

T: +44 (0)141 353 5037

#### GUILDFORD

T: +44 (0)1483 889800

#### LEEDS

T: +44 (0)113 258 0650

#### LONDON

T: +44 (0)203 805 6418

#### MAIDSTONE

T: +44 (0)1622 609242

#### MANCHESTER

T: +44 (0)161 872 7564

#### NEWCASTLE UPON TYNE

T: +44 (0)191 261 1966

#### NOTTINGHAM

T: +44 (0)115 964 7280

#### SHEFFIELD

T: +44 (0)114 245 5153

#### SHREWSBURY

T: +44 (0)1743 23 9250

#### STAFFORD

T: +44 (0)1785 241755

#### STIRLING

T: +44 (0)1786 239900

#### WORCESTER

T: +44 (0)1905 751310

### Ireland

#### DUBLIN

T: + 353 (0)1 296 4667

### France

#### GRENOBLE

T: +33 (0)4 76 70 93 41